



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,926	07/10/2003	Hideaki Yamasaki	010986.52578US	9914
23911	7590	12/01/2005	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			LUND, JEFFRIE ROBERT	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/615,926	YAMASAKI ET AL.
	Examiner Jeffrie R. Lund	Art Unit 1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 September 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 25-28 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 July 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-24 in the reply filed on April 19, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 2 recites the limitation "said inert gas" and "said diluting carrier gas" in line

2. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 7, 9-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 5-259093 ('093).

'093 teaches a CVD apparatus that includes: a film forming chamber; a source gas with carrier gas 10a; an diluting inert gas 10b; a concentration detector 7 located in a gas flow path 2; and a gas flow controllers 1a, 1b controlling the flow rate of the gases as a result of the measurement of the concentration detector. (Abstract, figure 1) The specific gas and how the gas is generated are an intended use of the apparatus, and the apparatus as claimed can inherently supply the desired gas formed in the desired manner.

Alternately, it would be obvious to supply the desired gas to the apparatus to perform the desired process in the apparatus, and to generate the desired gas as required by the source, i.e. vaporizing a solid or liquid source.

7. Claims 1-5, 7, 9-11, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shinriki et al, US Patent Application Publication 2003/0236001 A1.

Shinriki et al teaches a CVD apparatus that includes: a film forming chamber 22; a source gas 23A with carrier gas (Ar) supplied via MFC 31; a diluting inert gas (Ar) supplied via MFC 32; a concentration detector 33; and a controller 34 controlling the MFC 31, 32, which control the flow rate of the gases as a result of the measurement of the concentration detector 33. (Entire document, specifically, figures 2 and 3) The specific gas is an intended use of the apparatus, and the apparatus of Shinriki et al can

inherently supply the desired gas.

Alternately, it would be obvious to supply the desired gas to the apparatus to perform the desired process in the apparatus.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-259093 ('093) in view of Harada et al, US Patent 6,202,653 B1.

'093 was discussed above.

'093 differs from the present invention in that '093 does not teach a bypass line or that the diluting inert gas and carrier gas have a common source.

Harada et al teaches a coating chamber that includes a bypass line 41 and a

common inert gas and carrier gas source 33. (Figure 2, 5, and 6)

The motivation for adding the bypass line of Harada et al to the apparatus of '093 is to allow the source gas to be dumped to maintain a constant flow of the source gas when the apparatus is not in use, and to enable the supply lines to be evacuated.

The motivation for having a common gas source is to simply the gas supply system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the bypass line and common gas source of Harada et al in the apparatus of '093.

11. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinriki et al, US Patent Application Publication 2003/0236001 A1, in view of Harada et al, US Patent 6,202,653 B1.

Shinriki et al was discussed above.

Shinriki et al differs from the present invention in that Shinriki et al does not teach a bypass line or that the inert gas and carrier gas have a common source.

Harada et al teaches a coating chamber that includes a bypass line 41 and a common diluting inert gas and carrier gas source 33. (Figure 2, 5, and 6)

The motivation for adding the bypass line of Harada et al to the apparatus of Shinriki et al is to allow the source gas to be dumped to maintain a constant flow of the source gas when the apparatus is not in use, and to enable the supply lines to be evacuated.

The motivation for having a common gas source is to simply the gas supply

system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the bypass line and common gas source of Harada et al in the apparatus of Shinriki et al.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-259093 ('093) in view of Satake et al, JP 2001-234348.

'093 was discussed above.

'093 differs from the present invention in that '093 does not teach that the concentration detector is a FTIR.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of '093 is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of '093.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinriki et al, US Patent Application Publication 2003/0236001 A1, in view of Satake et al, JP 2001-234348.

Shinriki et al was discussed above.

Shinriki et al differs from the present invention in that Shinriki et al does not teach

that the concentration detector is a FTIR.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Shinriki et al is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Shinriki et al.

14. Claim 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over '093, JP 5-259093, in view of Tokai et al, US Patent Application Publication 2002/0014700 A1.

'093 was discussed above.

'093 differs from the present invention in that '093 does not teach that the controller includes a manometer (pressure sensor) and corrects the measured concentration based on the pressure.

Tokai et al teaches a coating chamber that includes a controller 38 that controls the gas sources 14 based on input from concentration detectors 36, 37 and a pressure sensor 60.

The motivation for controlling the concentration of the source gas in the apparatus of '093 using signals from both the concentration detector and pressure sensor as taught by Tokai et al is to control the source flows based on their

concentration, adjusted for the pressure.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the gas sources of '093 using information supplied by the concentration detector and pressure sensor as taught by Tokai et al.

15. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over '093 and Tokai et al as applied to claims 14 and 24 above, and further in view of Satake et al, JP 2001-234348.

'093 and Tokai et al differ from the present invention in that they do not teach that the concentration detector is a FTIR or that the concentration detector is located upstream of where the inert gas is added.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of '093 and Tokai et al is to provide a specific concentration detector as required but only generically disclosed.

The motivation for placing the concentration detector upstream of where the inert gas is added is to monitor the source without the inert gas. Furthermore, it has been held that the rearrangement of parts is obvious. (See *In re Japikse* 86 USPQ 70)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of '093 and Tokai et al, and to place detector upstream of where the inert gas is added.

16. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over '093, Tokai et al, and Satake et al as applied to claims 14-18, 20-22, and 24 above, and further in view of Suzuki, JP 58-67864.

'093, Tokai et al, and Satake et al differ from the present invention in that they do not teach a heated mirror located in the gas supply pipe.

FTIR detectors produce an IR beam that pass through a gas and is detected by a detector. The detector can be placed opposite the beam source so that the IR beam passes through windows on both sides of the gas pipe, or a mirror can be used to direct the IR beam to the detector.

Suzuki et al teaches heating a mirror exposed to deposition material to prevent the deposition material from depositing on the mirror. (Abstract, figure 3)

The motivation for placing a mirror in the supply pipe of '093, Tokai et al, and Satake et al is to provide an alternate and equivalent means of passing the IR beam through the gas supply pipe.

The motivation for heating a mirror exposed to coating material is to prevent deposition of material onto the mirror as taught by Suzuki et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a heated mirror in the gas supply pipe of '093, Tokai et al, and Satake et al.

17. Claim 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinriki et al, US Patent Application Publication 2003/0236001 A1, in view of Tokai et al, US Patent Application Publication 2002/0014700 A1.

Shinriki et al was discussed above.

Shinriki et al differs from the present invention in that Shinriki et al does not teach that the controller includes a manometer (pressure sensor) and corrects the measured concentration based on the pressure.

Tokai et al teaches a coating chamber that includes a controller 38 that controls the gas sources 14 based on input from concentration detectors 36, 37 and a pressure sensor 60.

The motivation for controlling the concentration of the source gas in the apparatus of Shinriki et al using signals from both the concentration detector and pressure sensor as taught by Tokai et al is to control the source flows based on their concentrations, adjusted for the pressure.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the gas sources of Shinriki et al using information supplied by the concentration detector and pressure sensor as taught by Tokai et al.

18. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinriki et al and Tokai et al as applied to claims 14 and 24 above, and further in view of Satake et al, JP 2001-234348.

Shinriki et al and Tokai et al differ from the present invention in that they do not teach that the concentration detector is a FTIR or that the concentration detector is located upstream of where the inert gas is added.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Shinriki et al and Tokai et al is to provide a specific concentration detector as required but only generically disclosed.

The motivation for placing the concentration detector upstream of where the inert gas is added is to monitor the source without the inert gas. Furthermore, it has been held that the rearrangement of parts is obvious. (See *In re Japikse* 86 USPQ 70)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Shinriki et al and Tokai et al, and to place detector upstream of where the inert gas is added.

19. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinriki et al, Tokai et al, and Satake et al as applied to claims 14-18, 20-22, and 24 above, and further in view of Suzuki, JP 58-67864.

Shinriki et al, Tokai et al, and Satake et al differ from the present invention in that they do not teach a heated mirror located in the gas supply pipe.

FTIR detectors produce an IR beam that pass through a gas and is detected by a detector. The detector can be placed opposite the beam source so that the IR beam passes through windows on both sides of the gas pipe, or a mirror can be used to direct the IR beam to the detector.

Suzuki et al teaches heating a mirror exposed to deposition material to prevent the deposition material from depositing on the mirror. (Abstract, figure 3)

The motivation for placing a mirror in the supply pipe of Shinriki et al, Tokai et al,

and Satake et al is to provide an alternate and equivalent means of passing the IR beam through the gas supply pipe.

The motivation for heating a mirror exposed to coating material is to prevent deposition of material onto the mirror as taught by Suzuki et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a heated mirror in the gas supply pipe of Shinriki et al, Tokai et al, and Satake et al.

20. Claims 1-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al, US Patent 6,772,781 B2 in view of Bondestam, US Patent 6,779,378 B2.

Doty et al teaches a CVD apparatus that includes: a film forming chamber 140; a source gas 110,120 supplied via MFCs 160, 170; a gas bypass line 150; and a controller 200 controlling the MFC 160, 170, which control the flow rate of the gases as a result of the measurement of the concentration detector 192. (Entire document, specifically, figures 2 and 3) The specific gas is an intended use of the apparatus, and the apparatus of Shinriki et al can inherently supply the desired gas.

Doty et al differs from the present invention in that Doty et al does not teach a source with a carrier gas, a diluting inert gas, that the diluting inert gas and carrier gas have a common source, or the gas source has a vapor pressure less than 266 Pa, i.e. as $W(CO)_6$.

Bondestam teaches a coating chamber that includes: a common gas source 130 that is split into a carrier gas and supplied to source 102 via conduit 136, and a diluting

inert gas supplied via conduit 134. (Entire document, specifically, Figure 1)

The motivation for replacing the two sources of gas of Doty et al with a single source of Bondestam is to simplify the gas supply system

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the independent gas sources of Doty et al with a common gas source of Bondestam.

21. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al and Bondestam as applied to claims 1-11, and 13 above, and further in view of Satake et al, JP 2001-234348.

Doty et al and Bondestam differ from the present invention in that they do not teach that the concentration detector is a FTIR.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Doty et al and Bondestam is to provide a specific concentration detector as required but only generically disclosed by Satake et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Doty et al and Bondestam.

22. Claims 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al and Bondestam as applied to claims 1-11, and 13 above, and further in view of Tokai et al, US Patent Application Publication 2002/0014700 A1.

Doty et al and Bondestam differs from the present invention in that they do not teach that the controller includes a manometer (pressure sensor) and corrects the measured concentration based on the pressure.

Tokai et al teaches a coating chamber that includes a controller 38 that controls the gas sources 14 based on input from concentration detectors 36, 37 and a pressure sensor 60.

The motivation for controlling the concentration of the source gas in the apparatus of Doty et al and Bondestam using signals from both the concentration detector and pressure sensor as taught by Tokai et al is to control the source flows based on their concentration, adjusted for the pressure.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the gas sources of Doty et al and Bondestam using information supplied by the concentration detector and pressure sensor as taught by Tokai et al.

23. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al, Bondestam and Tokai et al as applied to claims 1-11, 13, 14 and 24 above, and further in view of Satake et al, JP 2001-234348.

Doty et al, Bondestam and Tokai et al differ from the present invention in that they do not teach that the concentration detector is a FTIR or that the concentration detector is located upstream of where the inert gas is added.

Satake et al teaches a coating chamber that includes a FTIR concentration detector 20. (Abstract, figure 7)

The motivation for using a FTIR concentration detector in the apparatus of Doty et al, Bondestam and Tokai et al is to provide a specific concentration detector as required but only generically disclosed.

The motivation for placing the concentration detector upstream of where the inert gas is added is to monitor the source without the inert gas. Furthermore, it has been held that the rearrangement of parts is obvious. (See *In re Japikse* 86 USPQ 70)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FTIR concentration detector of Satake et al in the apparatus of Doty et al, Bondestam and Tokai et al, and to place detector upstream of where the inert gas is added.

24. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al, Bondestam, Tokai et al, and Satake et al as applied to claims 1-11, 13-18, 20-22, and 24 above, and further in view of Suzuki, JP 58-67864.

Doty et al, Bondestam, Tokai et al, and Satake et al differ from the present invention in that they do not teach a heated mirror located in the gas supply pipe.

FTIR detectors produce an IR beam that pass through a gas and is detected by a detector. The detector can be placed opposite the beam source so that the IR beam passes through windows on both sides of the gas pipe, or a mirror can be used to direct the IR beam to the detector.

Suzuki et al teaches heating a mirror exposed to deposition material to prevent the deposition material from depositing on the mirror. (Abstract, figure 3)

The motivation for placing a mirror in the supply pipe of Doty et al, Bondestam,

Tokai et al, and Satake et al is to provide an alternate and equivalent means of passing the IR beam through the gas supply pipe.

The motivation for heating a mirror exposed to coating material is to prevent deposition of material onto the mirror as taught by Suzuki et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a heated mirror in the gas supply pipe of Doty et al, Bondestam, Tokai et al, and Satake et al.

Response to Arguments

25. Applicant's argument, see the paragraph bridging pages 10 and 11, filed September 22, 2005, with respect to the rejections of Yamamoto, JP 6-5505 have been fully considered and are persuasive. The rejections of the claims based on Yamamoto have been withdrawn.

26. Applicant's arguments filed September 22, 2005 have been fully considered but they are not persuasive.

In regard to the arguments applied to '093, the Examiner disagrees. The arguments are all based on how the apparatus is used not the structure of the apparatus. The apparatus of '093 can perform all the claimed functions. Furthermore, it has been held that: claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims cover what a device is, not what a device does" (Emphasis in original) *Hewlett-Packard Co. V. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a

claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus “ if the prior art apparatus teaches all the structural limitations of the claim *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Also see MPEP 2114

In regard to the newly added limitation “a source gas formed by vaporizing a solid source material or a liquid source material” is a description of the gas not the apparatus, and all gases can be found in liquid or solid forms. If the Applicant wants to limit the apparatus, the vaporizer needs to be claimed.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.
28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
11/28/05